2006 Report
Off-Center Evaluation Planting of Woody Plant Materials Brookings, South Dakota

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INTRODUCTION

The Plant Materials Center (PMC), located at Bismarck, North Dakota, was established in 1954 as part of the U. S. Department of Agricultures' Soil Conservation Service, now the Natural Resources Conservation Service (NRCS). The Bismarck PMC serves the States of Minnesota, North Dakota, and South Dakota. Tree and shrub improvement has always been an integral part of the plant materials program in South Dakota. There is a need to evaluate how different trees and shrubs will perform in diverse soil and climatic conditions. The PMC currently has tree and shrub evaluation sites at eight locations in the three-state area, including two sites in South Dakota.

This evaluation planting is in cooperation with the Eastern South Dakota Soil and Water Research Farm which consists of 15 Soil and Water Conservation Districts (SWCD) in eastern South Dakota. The purpose of the Research Farm is to promote research of efficient farm production practices that conserve soil and water resources. The Major Land Resource Area is 102A, Rolling Till Prairie. The soils on this farm are characteristic of those found in northeastern South Dakota and west central Minnesota and are similar to soils common to the northern Corn Belt region. Long-term average precipitation is 22.81 inches. The Research Farm consists of 80 acres approximately 1 mile north of the campus of South Dakota State University. The first trees and shrubs were planted at the new site beginning in 2004. The existing ground cover is smooth bromegrass sod. Strips to be planted are chemically killed with glyphosate, and then tree fabric is laid down. Holes are punched in the fabric when new entries are added. The trees are spaced 10 feet apart with-in the row, and the shrubs are spaced 5 feet apart with-in the row. The evaluation site is divided into an area for shrubs and an area for medium to tall trees. Measurements and notes are taken at the end of each growing season.

OBJECTIVES

1. Conduct evaluation studies to determine the potential adaptation and performance of new and/or previously untested woody plant materials for conservation purposes.
2. Conduct advanced evaluation and progeny testing of selected strains of woody plant materials.
3. Establish seed and plant increase of selected accessions.

4. Develop and release improved plant materials for public use.
5. Promote evaluation site for tours and other educational purposes.

ACTIVITIES IN 2006

Thirty accessions of 28 different species are currently being evaluated. Five plants each of four new accessions were planted on May 2, 2006. Planted in the Tree Block was an Iowa source of northern catalpa *(Catalpa speciosa)* from Big Sioux Nursery. Planted in the Shrub Block was a New York source staghorn sumac *(Rhus typhina)* from Lincoln-Oakes Nurseries, Russian olive/silverberry hybrid *(Elaeagnus* X 'Jefmorg') from Lincoln-Oakes Nurseries, and common juniper (*Juniperus communis*) from North Dakota grown by the PMC. All plants were bareroot seedlings, except for the olive hybrids which were potted stock. Potted stock was used to replace one missing Amur chokecherry (*Prunus maackii*), and one missing roundleaf hawthorn (*Crataegus chrysocarpa*).

The construction of a new building for the Brookings County SWCD resulted in the loss of much of the Tree Block. Accessions which were lost included 9082885 aspen (2 remaining), 9082886 aspen, 9082892 white poplar, 9091968 Kentucky coffeetree, 9091973 red oak (3 remaining), and 9091974 red oak. A new area will be identified for continued planting of tree entries. The grass strips between the tree rows were kept

Shrub block at the Brookings Off-Center Evaluation Planting

mowed during the growing season. Weeds growing in the fabric hole with the trees and shrubs were removed by NRCS field office staff.

NRCS field office staff helped collect data on selected entries on September 12, 2006. Measurements and notes were taken on crown spread and plant height; disease and insect damage; drought and cold tolerance; fruit production; survival; vigor; and animal damage. The new planted accessions did well and were off to a good start except for the olive hybrid which had two plants that had recently died. The leaves were brown and still on the plants with no obvious signs of injury or disease. Other entries that are performing well include common ninebark, wayfaring bush, seaberry, American currant, Missouri gooseberry, gray dogwood, pin cherry, arrowwood viburnum, black chokeberry, Sheridan Source chokecherry, 'Bridger Select' Rocky Mountain juniper, and 'Hunter' ponderosa pine. Information was collected on all accession/entries in 2006.

Data is summarized annually and documented in the Bismarck PMC Annual Technical Report. Anyone who desires a copy of the latest data summary information can contact me at (701) 530-2075, or the NRCS field office at Brookings (605) 692-8003. The report is 8 pages in length.

NEW RELEASES

Data collected from this site will be used to support the formal cooperative release of new woody plant materials from the Bismarck PMC.

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